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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/067,910 04/28/98 VAN OVERVELD

C PHN.16.341

EXAMINER

WM02/0604

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ART UNIT

PAPER NUMBER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 19

Application Number: 09/067,910  
Filing Date: April 28, 1998  
Appellant(s): VAN OVERVELD ET AL.

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Russell Gross  
For Appellant

**EXAMINER'S ANSWER**

This is in response to appellant's brief on appeal filed March 23, 2001.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

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**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

The rejection of claims 1-11 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

Chen et al. "View Interpolation for Image Synthesis", Proceedings 20th Annual Conf. on Computer Graphics, Aug. 2-6, 1993, Anaheim, CA, USA. ACM, pages 279-286.

Debevec et al. "Modeling and Rendering Architecture from Photographs", Computer Graphics Proceedings, Annual Conference, 1996. pages 11-20.

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1, 2, and 8 rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over CHEN (Chen et al. 1993. "View Interpolation for Image Synthesis", Proceedings 20th Annual conference on Computer Graphics. ACM. pages 279-286).
  - a. CHEN describes computing a respective model for each input image, the respective model comprising information about surface patches located in the space of the scene, substantially each surface patch corresponding to a respective set of pixels in the respective input image; (page 2, left column, lines 14-21), determining for each model which points from the surface patches are visible and selecting the output point from the respective points on the basis of comparison of parameters of the surface patches, and determining the pixel value from the image information in the input image corresponding to the respective model from which the output point is selected (page 3, left column, lines 46-61).
  - b. Claims 1 and 8 rejected as it would have been obvious to one of skill in the art at the time of the invention since CHEN teaches the computational advantages of his method over other rendering methods for generating new simulated views.

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- c. Claims 2 rejected per claim 1 and that CHEN discloses using depth to discriminate between values of two-separate models for calculation of a pixel value (page 3, right column, lines 23-39).
- 2. Claims 4-7, 9, 10 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN.
  - d. Claim 4 rejected per claim 1 and that correspondence of size of an output pixel back-projected onto a model surface pixels(=texels) is well-known in texture mapping.
  - e. Claim 5 and 10 rejected per claims 1 and 8 respectively as it recites scan-conversion of the models into pixel spans which is well-known in the graphic software arts.
- 3. Claims 7 and 11 rejected per claim 1 and 8 respectively and that these claims merely recite adding further images to an image set such that different images are used to generate the output image when a particular viewpoint is reached, i.e. when a distance to the further models is less than the distance to the present models.
  - f. Claims 6 and 9 rejected per claims 1 and 8 respectively and that light source designation and determining lighting effects are well-known in the art.
- 4. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN as applied to claim 1 above, and further in view of DEBEVEC (Debevec et al. "Modeling and Rendering Architecture from Photographs: A hybrid geometry- and image-based approach". Computer Graphics Proceedings. Annual Conference, 1996.).
  - g. DEBEVEC discloses using the viewing angle to select which one of a set images are mapped to a model surface for viewing, in which the image whose original normal

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vector is closest to the present viewing angle is chosen (page 17, left column, lines 36-40).

h. It would have been obvious to one of skill in the art at the time of the invention to combine DEBEVEC with CHEN because DEBEVEC teaches the improvement in model realism to be achieved by using images whose surface normal is closest to axis of the present viewing angle when rendering a model.

**(11) Response to Argument**

Applicants argue that CHEN does not disclose “computing a respective model for each image”. Applicants appear to be relying on features not disclosed in the claims in arguing against the applicability of the prior art.

Specifically, appellants rely on a definition of “computing” and “model” as distinguishing features over CHEN. CHEN, as disclosing a system which is executed on a computer, certainly discloses “computing”. Since the system of CHEN acquires pixel data with range data, it is inherent in such a system that computation occurs in order to associate such pixel data with range data from its original source, be it imaging or artificially generated images.

The term model apparently refers to the surface patches which appellants claimed merely as a set of pixels, inferring one or more pixel. As such, an image composed entirely of single pixel patches with range data is equivalent to the disclosure in CHEN of pixels with range data. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).


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The fact that CHEN also discloses computing a correspondence between pixels in successive images is not of consequence. While CHEN provides greater details of the method used, this is not of consequence to the application of the reference to the claims.

Appellants further argue that CHEN does not disclose "selecting the output point from the respective points on the basis of comparison of parameters of the surface patches containing the respective points in different models". CHEN, page 3, right col., "Section 2.3.1 Overlaps" specifically discloses using a z-buffer algorithm to choose among overlapping pixels from different images during interpolation, i.e. "selecting the output point ... on the basis of comparison of parameters of the surface patches".

For the above reasons, it is believed that the rejections should be sustained.

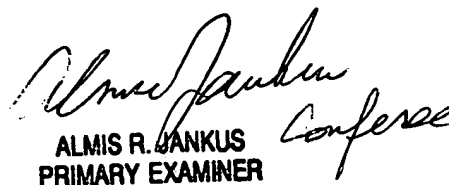
Respectfully submitted,



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June 3, 2001

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